

WOMEN IN FISHERIES

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Women in Coastal and Fisheries Resources Management

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Introduction

Sustainable development is an overriding strategic issue and a challenge in coastal and fisheries resource management. Issues of sustainability demand new ways of management so that a balance between food security and environmental resources can be attained. In the context of eco - labeling, in future production of fish and other coastal based commodities; acceptable sustainability credentials will probably be as essential as quality and safety standards. The World Resources Institute in 1996 reported that about 35 % of the world's coasts are at high potential risk of degradation and another 17 % are at moderate risk. As an estimated 90 % of the world's capture fisheries production is dependent on coastal habitats, the relevance of fisheries is obvious. Moreover, the coastal fishing communities are typically characterised by intense competition for scarce resources, which is often associated with unregulated access to these resources. The known consequences of habitat damages include loss or lowering of productivity and associated threat to local food security, contaminated aquatic food products, reduced economic viability, increased levels of conflict involving fishers, physical displacement of communities, increased unemployment and loss of trade opportunities (FAO, 1999).

Human beings as the major component and as the user of the coastal and fisheries resources have heavy interactions with the precious natural system and have very critical role in their protection and sustainable management. According to the FAO (2001) millions of people migrate to seaboard cities and the

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population of world's coastal zone is expected to double within the next 20 - 30 years. More than half of the coastal zones in many regions is already at moderately to high risk. In India, due to human interference, lakes, marshes, river systems and other wet lands are degraded and some wet-lands, including backwaters of Cochin are seriously threatened (Devaraj *et al.*, 1999; Kumar and Asija, 2000). Figures recently released by FAO on number of people in fishing and fish farming worldwide has more than doubled since 1970. Most of the growth has taken place in 1980 and mainly in Asian countries where 4/5th of the fishers and fish farmers dwell.

There are very good examples from different parts of the world on successfully involving women in the management of natural resources. In Chile women's interest in protecting the resources, respecting the closed season and getting better prices demonstrated their appreciation of the problem arising from over exploitation of resources (Alvarez, 2001). The shell fish revolution caused by large-scale changes in Spain's infrastructure development and inclusion in the European Community enabled women in shell fish industry to earn high independent income and motivated them to take a politically active role to protect and manage shell fish resources (Meltzoff and Board, 1996). Similar instances can be cited in forestry, where community based management (CBM) involving women was followed. Women have greater potential to tackle food security and sustainability (Erftemeijer and Ratanadukul, 1998; Gabdegdesign, 1996; Meynert, 1996; Panda, 2000).

The coastal rural population depends on coastal resources for food, fodder and fuel in many ways. It is estimated that in India about six million people are directly engaged in marine fisheries and their families live in the coastal areas. Women forming fifty per cent of the total population and can play a very important role in the sustainable development of coastal resources in the context of the implementation of coastal zone regulations (CRZ). It is important to

discuss the possible role of women in handling and management of these resources, their understanding of the reasons for environmental degradation and laws and regulations pertaining to use of coastal resources and gender issues involved in sustainable development.

A study was conducted in Ernakulam and Allepy Districts of Kerala in the west-coast and Kanyakumari in Tamil Nadu in the east-coast. The methodology included personal interview, personal observations, group discussions and case studies. Information was also collected from secondary sources including the records of local administration and fish processing units.

Women in fisheries

Fisheries is the most important resource for communities inhabiting the coasts as it forms their major livelihood. Besides attending routine family chores, coastal women also support the fisheries sector through their involvement in small-scale fisheries operations such as net making, fish culture, fish pre-processing, processing and marketing. The nature of contribution varies with the geographical area, resource availability, type of technology, infrastructure, access to processing facilities, marketing pattern, rural-urban settings and social factors. Women's role in coastal resource management become more pronounced with the increasing number of female-headed households (Krishna Srinath, 1993).

Women in fish processing

Socio-economic condition of the pre-processing and processing workers is given in Table 1. A total of about 0.4 million women are estimated to be engaged in fish pre-processing and processing work in India. Women are employed as workers in peeling sheds for pre-processing of shrimps, squids and cuttlefish and as workers, technicians and supervisors in processing units for cleaning, grading, processing, quality control and packing. In the processing factories they also

handled finfish and crabs. In the centres selected in Kerala all the women workers are from the nearby localities and in Tamil Nadu women from Kerala are also employed in pre- processing and processing work. Women from Kerala are employed in large numbers for this work in other maritime states also as they exhibit better skill in the work. They do not usually migrate by choice, but economic compulsions force them to migrate, once married they settle down as homemakers. Back home they continue the work if available nearer home. Women with small children do not like working in the night shifts.

In activities such as net making and marketing, women are being marginalised due to increasing mechanisation, commercialisation and centralisation of fish landings.

Table 1. Socio-economic variables of women workers in pre-processing and processing units

SE variable	Pre- processing		Processing	
	Kerala	Tamil Nadu	Kerala	Tamil Nadu
State	Kerala	Tamil Nadu	Kerala	Tamil Nadu
Average age	30	25	29	20
Married women (%)	50	30	35	27
Education*	>HS	>M S	>H.S	>M S
Family size	4-5	5-6	4-5	5-6
No of days employed/year	280	220	300	320
Quantity processed/day	30 , 65	25 , 65	-	-
Shrimp/squid&CF (kg)				
Annual income (Rs)	15,000	13,500	19,500	15,000

*H.S.- High school; M.S. Middle school

Women in management of land-based coastal resources

The common property resources are shared by individuals, community, government and private institutions. Even though desegregated information for fisherfolk is not available the population figures in Kerala indicate a greater number of females in both the villages under study.

The literacy rate for male and female for the District was approximately 96 % for males and 91 % for females against the Kerala state average of 94 % and 88 % for males and females respectively indicating much scope for improvement in the selected villages. Dominating caste in Elamkunnappuzha is Dheevara and in Chellanam Latin Catholics constitute a majority. Regarding ownership of assets, only about 2,000 non - mechanised crafts are operated by 10,000 fishermen in Elamkunnappuzha and a same number for 16,000 fishermen in Chellanam. The marine and backwater fisheries are carried only by men and women of certain communities in the shallow impounded waters and in the shorewater. About 15% of aquaculture fields in Elamkunnappuzha and about 3 % in Chellanam were owned by women (Govt. of Kerala, 2001).

Major uses of coastal resources by villagers

The coastal state of Kerala supports about 0.64 million fisherfolk. There are 41 west flowing rivers, which discharge into 30 estuaries opening into the sea through perennial and seasonal outlets across the bar mouths. The estuaries and backwaters, which once occupied an area of 2,426 km², have now shrunk to 652 km² because of reclamation for agriculture and human settlement. (Devaraj *et al.*, 1999). Major uses of coastal resources in Elamkunnappuzha and Chellanam are similar and as identified by women living there, are indicated in Table 2.

Table 2. Major uses of coastal resources in Elamkunnappuzha and Chellanam

Elamkunnappuzha	Chellanam
<ul style="list-style-type: none"> ◆ Food (fish, paddy, coconut, ◆ Vegetables, animals, birds) ◆ Fishing for livelihood ◆ Aquaculture, agriculture ◆ Housing (land, sand & gravel, timber, mangrove) ◆ Schooling ◆ Industry 	<ul style="list-style-type: none"> ◆ Feed & fodder(grass, hey, grains, Leaves, worms) ◆ Fuel (mangroves, trees) ◆ Water (cooking, bathing, washing, transport,aquaculture, agriculture) ◆ Transport ◆ Waste disposal ◆ Recreation ,Religion

Causes for deterioration of coastal resources

The natural causes of deterioration of coastal zone, as understood by the respondents, include subsidence, drought, storm, erosion and sea level variation. Coastal zone is a highly dynamic system and is subjected to increasing populations and economic pressures manifested by a variety of coastal activities. Damages caused due to human interference, according to the respondents are given in Table 3.

Table 3. Causes of deterioration of coastal resources according to the respondents

Nature of interference	Causes	Effect
Coastal development including habitat modification	Destruction, alteration and construction	Decline of coastal zone, common property resources and growing competition for space
Aquaculture	Increased investment and faulty use of technology	Higher financial risk, adversity on soil and water quality and imbalances in land use pattern
Industrialisation	Release of toxins and pathogens	Ill- effects on human and fisheries resources
Tourism	Inflow of external population	Pressure on coastal resources and restricted mobility for women

Women's awareness of coastal zone issues

Four important issues of coastal resource regulation were presented to women individually and in groups, their awareness and understanding were rated on a three- point scale. The responses are presented in Table 4.

Table 4. Women's understanding coastal zone issues

Issues	Awareness	Understanding
Pollution	High	Moderate
Ban on monsoon trawling	High	Moderate
Mangroves	Moderate	Low
Coastal Zone Regulation(CRZ)	Moderate	Moderate

Housing

At the community level housing is a major factor, which leads to growing competition for space. Vypeen Island where Elamkunnappuzha is situated was formed as a result of the floods in the year 1341. With the increase in family size the plots of land are further divided to build houses. About 25 % of the houses are thatched.

Pollution due to aquaculture and industrial development

New methods of aquaculture and development of industrial activities in the district are said to be the major causes for coastal zone degradation. Pollutants from the industry lead to diseases of humans and other fauna of the coastal zone.

Disposal of non degradable waste

Plastic has invaded the lives of people everywhere. One of the major reasons for environmental degradation of the coast is water-logging due to clogging of canals by non-degradable materials like plastic. There is no effective mechanism of disposing it. The smoke from burning of certain materials cause health problems. Women in Elamkunnappuzha and Chellanam have a great concern for this. Though the local Panchayats had formulated plans for waste disposal and cleaning of canals but the implementation was not very effective.

Disposal of human waste

Non-availability of clean water required for sanitation and water logging poses problems in the disposal of human waste, which is thus an impediment to sanitation. People continue to use open space and canals for excretion. Only about 10 % of the households have sanitary latrines. Gender related problems are very grave in this regard.

Drinking water scarcity

Due to improper management of centralised water supply at the corporation and district levels the coastal villages have been worst hit by drinking water scarcity for more than last 10 years now. Collection of potable water from water tankers and from far away wells is the greatest drudgery women have to undergo in their day-to-day lives. They spend sleepless nights to fetch water. It is difficult to get enough water even for washing and bathing.

Tourism

Women are anxious about the growing tourism in the villages. They are worried that the inflow of outsiders may interfere with their normal life and lead to conflict over the use of resources.

Mangrove

Mangroves are very valuable to the coastal people as they not only provide shade and shelter but also used for building construction work and as fuel. Thick mangrove vegetation in Elamkunnappuzha and Chellanam have been destroyed for housing and developmental purposes, leaving only 5 ha of mangrove. *Rizhophora* and *Candalia* dominated Elamkunnappuzha and *Avicenia* and *Acanthus* are the major species in Chellanam. Women are aware of the importance of mangroves and the action taken by local NGOs in mangrove rehabilitation.

Ban on monsoon trawling

Women in the traditional fisher households operating motorised and non-motorised canoes consider ban on monsoon trawling as a boon as it helped in increased earnings. They are aware of the damages caused to the fishery resources by the trawl nets. They also feel that fishing has become capital intensive for artisanal fishermen as the fish catch by them has come down and

group ventures like ring-seine operation are becoming uneconomical.

Coastal zone regulation

Upgradation and protection of coastal resources is considered to be very important by the women. However they opine that construction of houses by local fishermen should be exempted from restrictions of CRZ regulation, as it is difficult to find alternative housing sites in the village. The coastal strips are becoming narrower due to subsidence and the women in Chellanam reported that the sea which was 2-3 km from their village now it had reached their doorsteps. Flood occurs three times a year causing severe damage to the houses and other assets. Women assume major responsibility in managing the situation and their possessions (Krishna Srinath and Balasubramaniam, 1997). They are told to lay sand filled sacs along the shore to check water inflow, removing sand from one area to fill another leads to more problems. In certain locations as in Puthuvaippu government has taken steps to rehabilitate people residing in highly erosion prone areas. The Ernakulam district is well laid with walls along the sea but over the years these walls have lowered by about one meter.

Women's priorities in coastal zone management

The following are the priorities of women of Elamkunnappuzha and Chellanam in the context of coastal zone management:

- ◆ Improvement of drinking water supply
- ◆ Finalisation of coastal zone regulation policy for Kerala which is pending with the government
- ◆ Disposal of non degradable waste

They are willing to cooperate and work for the improvement of coastal zone provided they are given guidance and financial support.

Conclusion

A complex set of environmental, economic and social issues underlie the future of coastal zone. According to the FAO, unless governments and the users of coastal resources take appropriate action, population pressure and associated levels of economic activities will further increase the already evident exploitation of coastal resources and environment degradation of many coastal habitats. An understanding of a specific coastal zone is incomplete without a clear understanding of differences and inequalities between and among women and men- their priorities, activities, resources and access to decision making. There is a marked gender division of labour in agriculture, aquaculture, fisheries, forestry and tourism and other economic activities in the coastal areas (Woroniuk and Schalkwyk, 1998). Enhancement methods include fisheries management, habitat conservation, juvenile protection, strengthening of fisheries institutions and prevention of poaching (FAO, 2001). Environmental activism drives emphasis on natural resources management away.

Women of Kerala are conscious of sanitation and cleanliness and are sensitive to the requirements of personal hygiene and clean surroundings. This consciousness and higher rate of literacy can be taken advantage of. Traditional wisdom in coastal resources management should be used in micro-level interventions. There is considerable bias in extension coverage. Women are said to be by-passed by extension. Environmental issues are yet to gain importance in extension agenda.

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